DEPARTMENT OF TRANSPORTATION
DES-OE MS #43
1727 30TH Street, 2ND Floor
Sacramento, CA 95816

November 7, 2003

08-Riv-215,60,91-60.7/70.6, 22.0/18.5, 32.7/34.7
08-334844
ACNHI-215-1(219)92N
ACNH-X065(080)N

Addendum No. 5

Dear Contractor:

This addendum is being issued to the contract for construction on State highway IN RIVERSIDE COUNTY, IN RIVERSIDE AND MORENO VALLEY ON ROUTE 215 FROM 0.4 KM NORTH OF EUCALYPTUS AVENUE OVERCROSSING TO COLUMBIA AVENUE OVERCROSSING, ON ROUTE 60 FROM 0.6 KM EAST OF DAY STREET UNDERCROSSING TO 0.4 KM WEST OF MAIN STREET OVERCROSSING, ON ROUTE 91 FROM 0.3 KM SOUTH OF UNIVERSITY AVENUE UNDERCROSSING TO 0.1 KM NORTH OF SPRUCE STREET OVERCROSSING.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on December 4, 2003, instead of November 20, 2003.

This addendum is being issued to set a new bid opening date as shown herein and revise the Project Plans, the Notice to Contractors and Special Provisions, and the Proposal and Contract.

On Project Plan Sheets 1543 and 1544, all unidentified electroliers shown are "Type S-3".

On Project Plan Sheet 1584, the signal mast arm pole to be used for ramp metering is "27-3-129, 13.7 m signal arm".

Project Plan Sheets 1819, and 1820 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 1088, 2838A, 2838B, and 2838C are added. Half-sized copies of the added sheets are attached for addition to the project plans.

In the NOTICE TO CONTRACTORS AND SPECIAL PROVISIONS, "IMPORTANT SPECIAL NOTICES," subsection "Project Funding," the following paragraph is added:

"The California Transportation Commission (CTC) allocated funds for this contract at their September 25, 2003 meeting."

In the Special Provisions, "NOTICE TO CONTRACTORS," the thirteenth paragraph is revised as follows:

"Cross sections will be made available on CD-ROM in *.dgn, .dxf, .dwg* formats at the Pre-Bid inquiry desk of the Department of Transportation, District 8, 655 Second Street, San Bernardino, CA 92402."

08-Riv-215,60,91-60.7/70.6, 22.0/18.5, 32.7/34.7
08-334844
ACNHI-215-1(219)92N
ACNH-X065(080)N

In the Special Provisions, Section 2.05, "ESCROW OF BID DOCUMENTATION," the eleventh paragraph is revised as follows:

"The first, second and third apparent low bidders shall present the bid documentation for escrow at the Department of Transportation, 655 West Second Street, San Bernardino, California, on the second Monday, no later than 9:00 a.m., following the time indicated in the "Notice to Contractors" for the opening of bids. The fourth and subsequent apparent low bidders shall present the bid documentation for escrow if requested by the Department to do so."

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES," the following two paragraphs are added after the fifth paragraph:

"The Department will pay to the Contractor a lump sum incentive payment of $1,000,000 if the work on the Iowa Avenue Overcrossing structure and the Linden Avenue Overcrossing structure is complete so that all lanes on both structures are open to public traffic and no additional lane closures are required on those structures to complete the remaining work, prior to the expiration of 300 working days beginning on whichever is later:

1. the day after the Engineer has notified the Contractor in writing of the availability of the first bond sale proceeds to continue the work of the contract, or
2. April 1, 2004.

Delays due to actions required by the Engineer, performing normal inspection, testing and review duties, shall be considered as included in the working days specified. No extensions of time will be allowed for such actions in determining incentive payments."

In the Special Provisions, Section 8-1.03, "STATE-FURNISHED MATERIALS," is revised as attached.

In the Special Provisions, Section 9, "DESCRIPTION OF BRIDGE WORK," the fifth and sixth paragraphs are revised as follows:

"Soil nail walls of varying heights and various lengths:

RW215-211A

RW215-216

RW215-217

RW215-219

RW215-221

RW215-21B

RW215-21C

08-Riv-215,60,91-60.7/70.6, 22.0/18.5, 32.7/34.7
08-334844
ACNHI-215-1(219)92N
ACNH-X065(080)N

RW215-22

RW215-23

RW215-27

RW215-38

RW215-41

RW215-45

RW215-46

Type 1 retaining walls of varying heights and various lengths:

RW215-198

RW215-200

RW215-201

RW215-202B
Br. No. 56-RW202B

RW215-213

RW215-214

RW215-215

RW215-05
Br. No. RW215-05

RW215-24

RW91-129B

RW91-137A"

08-Riv-215,60,91-60.7/70.6, 22.0/18.5, 32.7/34.7
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In the Special Provisions, Section 10-1.15, "MAINTAINING TRAFFIC," twelfth paragraph, tables 30, 31, and 32 are revised as follows:

Blaine St UC, Bridge No. 56-0395
At Route 215

	Number	Width	Height
Vehicle Openings	2	10.4	4.6
	Location	Spacing	
Falsework Pavement Lighting	R, L, C	12 meters with C staggered half space	

(Width and Height in meters)
(R = Right side of traffic. L = Left side of traffic)
(C = Centered overhead)

Iowa Avenue OC, Bridge No. 56-0396
At Route 215

	Number	Width	Height
Vehicle Openings	2	10.4	4.6
	Location	Spacing	
Falsework Pavement Lighting	R, L, C	12 meters with C staggered half space	

(Width and Height in meters)
(R = Right side of traffic. L = Left side of traffic)
(C = Centered overhead)

08-Riv-215,60,91-60.7/70.6, 22.0/18.5, 32.7/34.7
08-334844
ACNHI-215-1(219)92N
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Linden Avenue OC, Bridge No. 56-0397
At Route 215

	Number	Width	Height
Vehicle Openings	2	10.4	4.6

	Location	Spacing
Falsework Pavement Lighting	R, L, C	12 meters with C staggered half space

(Width and Height in meters)
(R = Right side of traffic. L = Left side of traffic)
(C = Centered overhead)

In the Special Provisions, Section 10-1.19, "EXISTING HIGHWAY FACILITIES," subsection "COLD PLANE ASPHALT CONCRETE PAVEMENT," the last paragraph is replaced with the following two paragraphs:

"Cold plane asphalt concrete pavement (76 mm) shown on the plans shall be measured and paid for as cold plane asphalt concrete pavement (45 mm maximum).

The contract price paid per square meter for cold plane asphalt concrete pavement (45 mm maximum) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in cold planing asphalt concrete surfacing and disposing of planed material, including furnishing the asphalt concrete for and constructing, maintaining, removing, and disposing of temporary asphalt concrete tapers, as specified in the Standard Specifications and these special provisions and as directed by the Engineer."

In the Special Provisions, Section 10-1.231, "TIRE SHRED BACKFILL," is added as attached.

In the Special Provisions, Section 10-1.232, "RETAINING WALL MONITORING SYSTEM," is added as attached.

In the Special Provisions, Section 10-1.46, "MINOR CONCRETE (STAIRWAY)," the following paragraph is added after the first paragraph:

"Minor concrete (stairway) shall be integrally colored in conformance with Section 72-6.03, "Materials," of the Standard Specifications. The colors of the respective elements of the existing UC Riverside Stairway shall be as shown on the plans."

In the Special Provisions, Section 10-1.521, "JOINT SEAL ASSEMBLIES (MOVEMENT RATING EXCEEDING 100 mm)," the following paragraph is added after the last paragraph:

"Joint seal assemblies for movement ratings greater than 320 mm will be measured and paid for as joint seal assembly (MR 241 MM – 320 MM)."

08-Riv-215,60,91-60.7/70.6, 22.0/18.5, 32.7/34.7
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ACNH-X065(080)N

In the Special Provisions, Section 10-1.55, "ARCHITECTURAL SURFACE (TEXTURED CONCRETE)," the tenth paragraph is revised as follows:

"The bear relief texture shall simulate a formed relief with various concrete texture surfaces, treatments, and finishes constructed to the dimensions and shapes shown on the plans. Corners at the intersection of plane surfaces of concrete shall be sharp and crisp without easing or rounding. A Class 1 surface finish shall be applied to the architectural texture as shown on the plans."

In the Special Provisions, Section 10-1.691, "REINFORCED CONCRETE PIPE," the following three paragraphs are added after the last paragraph:

"1500 mm reinforced concrete pipe shall be measured and paid for as 1275 mm reinforced concrete pipe.

Jacked 1275 mm reinforced concrete pipe (Class III) shall be measured and paid for as jacked 1500 mm reinforced concrete pipe (Class III).

Jacked 600 mm and jacked 900 mm reinforced concrete pipe (Class III) shall be measured and paid for as jacked 1050 mm reinforced concrete pipe (Class III)."

In the Special Provisions, Section 10-1.71, "MISCELLANEOUS FACILITIES," the following two paragraphs are added after the last paragraph:

"900 mm precast concrete pipe inlet, 900 mm precast concrete pipe manhole and 900 mm debris rack cage will be measured by the unit.

The contract unit price paid for 900 mm precast concrete pipe inlet, 900 mm precast concrete pipe manhole and 900 mm debris rack cage shall include full compensation for furnishing and installing pipe reducers and rings and for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in 900 mm precast concrete pipe inlet, 900 mm precast concrete pipe manhole and 900 mm debris rack cage, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer."

In the Special Provisions, Section 10-3.09, "CONDUIT," in the first paragraph, the first sentence is revised as follows:

"Conduits to be installed underground shall be Type 3, schedule 80, unless otherwise specified."

In the Proposal and Contract, the Engineer’s Estimate Items 54, 76, 90, 118, 147, 149, 180, 206, 209, 212, 216, 246, 247, and 299 are revised, and Item 349 is added.

To Proposal and Contract book holders:

Replace pages 5, 6, 8, 10, 11, 13, 15, 17 and 20 of the Engineer's Estimate in the Proposal with the attached revised pages 5, 6, 8, 10, 11, 13, 15, 17 and 20 of the Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Attached is a copy of supplemental Materials Information.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

08-Riv-215,60,91-60.7/70.6, 22.0/18.5, 32.7/34.7
08-334844
ACNHI-215-1(219)92N
ACNH-X065(080)N

This office is sending this addendum by UPS overnight mail to Proposal and Contract book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Office Engineer

Attachments

8-1.03 STATE-FURNISHED MATERIALS

Attention is directed to Section 6-1.02, "State-Furnished Materials," of the Standard Specifications and these special provisions.

The following materials will be furnished to the Contractor:

A. Sign panels for roadside signs and overhead sign structures.
B. Sign overlay panels for roadside signs and overhead sign structures.
C. Mast arm sign hanger assemblies
D. Hardware for mounting sign panels as follows:

    1. Blind rivets for mounting overlapping legend at sign panel joints.
    2. Closure inserts.
    3. Aluminum bolts and nuts and steel beveled washers for mounting laminated sign panels on overhead sign structures.
    4. Aluminum bolts, nuts, and washers for mounting overhead formed panels.

E. Padlocks for backflow preventer assembly enclosures, backflow preventer assembly blankets, walk gates, and irrigation controller enclosure cabinets.
F. Disks for survey monuments.
G. Marker panels, including reflectors, for Type N, Type P, and Type R object markers.
H. Light emitting diode (LED's) modules for vehicular traffic signal units, Type A pedestrian signals, flashing beacon units, and sign lighting fixtures.
I. Model 170 controller assemblies, including controller unit, completely wired controller cabinet, and inductive loop detector sensor units.
J. Equipment for retaining wall monitoring system as follows:

    1. Pressure cells (RocTest Model EPC), concrete support pads and readout wire – Total 20
    2. Vibrating wire strain gages (RocTest Model SM-2W) and readout wire – Total 16
    3. Temperature sensors (RocTest Model TH-W) and readout wire – Total 16
    4. Tilt meters (RocTest Model 801S) and readout wire– Total 4
    5. Cable to connect instruments to datalogger (RocTest IRC-41A).
    6. Datalogger (Campbell Scientific Model CR10X-2M) – Total 2
    7. Solar panel(CambellScientific Model MSX20) – Total 2

Completely wired controller cabinets, with auxiliary equipment but without controller unit, will be furnished to the Contractor at 175 West Cluster Street, San Bernardino, CA 92408.

The Contractor shall notify the Engineer not less than 48 hours before State-furnished material is to be picked up by the Contractor. A full description of the material and the time the material will be picked up shall be provided.

State-furnished materials will be furnished to the Contractor at the Department of Transportation Redistribution Warehouse located at 175 West Cluster Street, San Bernardino, CA 92408 at (909) 830-6837 or (909) 830-6833.

Tire shred backfill will be furnished to the Contractor on site for Retaining Wall No. 215-201.

The Contractor shall notify the Engineer not less than three (3) weeks before tire shred backfill material is to be delivered to Retaining Wall No. 215-201.

10-1.231 TIRE SHRED BACKFILL

Tire shred backfill shall consist of placing and compacting State-furnished tire shred backfill; and furnishing, placing, and compacting soil cover at Retaining Wall No. 215-201 to the limits designated on the plans from Station 200+00 to Station 202+90. Tire shred backfill shall conform to the requirements specified for structure backfill in Section 19, "Earthwork," of the Standard Specifications and these special provisions.

Attention is directed to "State-Furnished Materials" of these special provisions for State-furnished tire shred backfill material.

The Contractor shall handle the tire shreds in a workmanlike manner to prevent the segregation or contamination of the tire shreds.

The Contractor shall coordinate on-site storage of tire shred backfill with the Engineer. The Contractor shall be responsible for providing their weekly preferred tire shred delivery quantity and schedule to the Engineer for review and approval at least 14 days in advance of the delivery week. The delivery schedule will be set by the Engineer based on the information provided by the Contractor.

The Contractor shall meet with the Engineer at least 2 days in advance of the last tire shred delivery week to determine the appropriate final quantity of tire shreds to be delivered. The final delivered quantity of tire shreds shall be subject to the approval of the Engineer. The tire shreds may be delivered at any rate up to 100 cubic meters per day, unless otherwise agreed to and approved by the Engineer. Delivery of tire shreds shall occur between the hours of 0600 and 1800, Monday through Saturday. No Sunday or Holiday delivery will be allowed without written approval of the Engineer.

The Contractor shall provide all equipment and personnel necessary to receive tire shred delivery based on the approved schedule. The material shall be delivered and off-loaded directly to the tire shred backfill.

The subgrade to receive tire shred backfill material, immediately prior to spreading, shall be scarified to a depth of a minimum of 200 millimeters, and compacted to a minimum of 90 percent. Tire shreds shall not be placed on soil containing organic matter.

Where shown on the plans, the tire shred backfill shall be encapsulated in a layer of filter fabric. The filter fabric shall meet the requirements of AASHTO M288-96, Class 2 (elongation less than 50%) and AASHTO M288-96, Stabilization Geotextile. Seams shall be overlapped a minimum of 450 mm. Overlaps shall be in the direction of backfill placement (previous roll on top).

The drainage system shall consist of weep holes and filter fabric as shown on the plans. A filter fabric meeting the requirements of Section 88-1.03 for underdrain filter fabric shall be placed encapsulating tire shred backfill material . Weep holes shall be as shown on the plans, except that pervious backfill will not be required. Full compensation for furnishing and placing the drainage system (weep holes and filter fabric) shall be considered as included in the contract price paid per cubic meter for tire shred backfill and no additional compensation will be allowed therefor.

A tolerance of 50 mm above the required grade and cross section will be allowed for the tire shred backfill. A tolerance of 75 mm below the required grading plane and cross section will be allowed for the tire shred backfill. Compaction below the grading plane for the tire shred backfill shall be compacted to the requirements of Section 19-3.06, "Structure Backfill" of the Standard Specifications.

Tire shred backfill may be placed by dumping from trucks or by any other method approved by the Engineer, as long as segregation of the tire shreds is minimized. Spreading of tire shreds should be accomplished using track-mounted equipment. No equipment with a weight greater than 1.5 tonnes will be allowed within 1.5 m of the back face of the wall.

Tire shred backfill shall be compacted in lifts of a maximum 300 mm thickness of the compacted material. Each layer of the tire shreds shall be placed over the full width of the section. The tire shreds shall be spread with any equipment deemed suitable by the Contractor and approved by the Engineer. The tire shreds as spread shall be well mixed with no pockets of either fine or coarse tire shreds. Compaction shall be obtained by a minimum of six complete coverage passes using vibratory smooth drum steel roller compaction equipment imposing a minimum static weight of 10 tonnes, or by another method as approved by the Engineer. Within 1.5 m of the wall, each lift of tire shreds shall be compacted by two passes of a walk-behind vibratory smooth drum, vibratory tamping foot, or vibratory sheepsfoot roller with a minimum static weight of 0.75 tonnes pounds and a maximum static weight of 1.5 tonnes. Vibratory plate compactors will not be allowed.

If the top of any layer becomes contaminated by addition of foreign material, including, but not limited to, soil, organic matter, oil, grease, gasoline, or diesel fuel, the contaminated material shall be removed and replaced with the specified material at no additional cost.

The side slopes and top of the tire shred back fill layer shall be covered by a 0.6 m thick low permeability soil cover (for tire shred backfills greater than 1 m thick). The soil shall have a minimum of 30 percent and a maximum of 60 percent passing the 75 μm sieve size using California Test Method 202. The soil shall have a minimum pH of 5.5 and a maximum pH of 8.5 using California Test Method 643. The low permeability cover shall be placed and compacted according to the requirements of Section 19-3.06, "Structure Backfill" of the Standard Specifications.

Settlement monuments shall be furnished and installed by the Contractor. Settlement monuments shall be placed at each instrument station at a depth of 0.6 meters below grade. Attention is directed to "Instrumentation" in section "Retaining Wall Monitoring System" of these special provisions for instrument stations.

The total quantity of tire shred backfill placed will be measured by the cubic meter.

The contract price paid per cubic meter for tire shred backfill shall include full compensation for furnishing all labor, materials (excluding State-furnished tire shreds), tools, equipment, and incidentals, and for doing all the work involved in placing and compacting State-furnished tire shreds for backfill, complete in place, including drainage system, and furnishing, placing and compacting soil cover, as shown on the plans, as specified in these special provisions, and as directed by the Engineer.

Full compensation for furnishing and installing settlement monuments for tire shred backfill shall be considered as included in the contract price paid per cubic meter for tire shred backfill and no additional compensation will be allowed therefor.

10-1.232 RETAINING WALL MONITORING SYSTEM

SCOPE.--This work shall consist of furnishing and installing conduits, instrument cabinet, and pull boxes; installing instrumentation using State-furnished pressure cells, vibrating wire strain gages, tilt meters and temperature sensors; and providing assistance to the State during the installation of the retaining wall monitoring system in conformance with provisions in Section 86, "Signals, Lighting and Electrical Systems," of the Standard Specifications and these special provisions.

Related work.—Earthwork, reinforced concrete retaining wall work and such other work incidental to and necessary for the proper installation and operation of the retaining wall monitoring system work shall be done in accordance with the requirements specified for similar work in these special provisions.

Order of work.—The time to start and perform the retaining wall monitoring work shall be coordinated with the schedule of retaining wall work and as recommended by the Engineer.

State-Furnished Materials.--Attention is directed to Section 8-1.03, ."State-Furnished Materials", of these special provisions. The following materials shall be installed by the Contractor and will be furnished by the State to the Contractor after Pre-job meeting with State personnel:

A. Pressure cells (RocTest Model EPC), concrete support pads, and readout wire– Total 20
B. Vibrating wire strain gages (RocTest Model SM-2W) and readout wire – Total 16
C. Temperature sensors (RocTest Model TH-W) and readout wire – Total 16
D. Tilt meters (RocTest Model 801S) and readout wire – Total 4
E. Cable to connect instruments to datalogger (RocTest IRC-41A)
F. Datalogger (Campbell Scientific Model CR10X-2M) – Total 2
G. Solar panel(CambellScientific Model MSX20) –Total 2

Materials.--The following materials shall be provided by the Contractor:

A. **Conduit and fittings.** Conduit and fittings shall conform to Section 86-2.05, "Conduit," of the Standard Specifications and as specified in these special provisions. Non-metallic conduit and fittings shall conform to the requirements for Type 3 in Section 86-2.05A, "Material," of the Standard Specifications. Metal conduit and fittings shall conform to the requirements for Type 1 in Section 86-2.05A, "Material," of the Standard Specifications..
B. **Instrument cabinet.** Instrument cabinet shall be Telephone Demarcation Cabinet Type B as shown on Standard Plan ES-3E and shall conform to Section 86-3.04A, "Cabinet Construction" of the Standard Specifications. Total 2 required.
C. **Pull boxes**. Pull boxes shall be No. 6 as shown on Standard Plan ES-8. Pull boxes shall conform to Section 86-2.06, "Pull Boxes," of the Standard Specifications and as specified in these special provisions.

INSTRUMENTATION

Instrumentation shall be installed in conformance with the requirements of these special provisions. Instrumentation shall be installed at Stations 200+10, 201+00, 203+05, and 203+38 at Retaining Wall No. 215-201.

General

This work shall consist of installing instrumentation to monitor the performance of the tire shred backfill and an adjoining section of conventional fill. Attention is directed to "Tire Shred Backfill" of these special provisions. Equipment for instrumentation will be “State Furnished Material”. Instrumentation shall be installed by the Contractor with the assistance of the Engineer’s duly authorized representative. In addition, the Contractor shall both furnish and install electrical conduit and instrument cabinets. All work performed under this section shall be coordinated with the Engineer. The Contractor's construction schedule shall take into account the timing of the instrumentation installation as described in this section. Observations and measurements of all monitoring devices will be accomplished by the Engineer or his representative at intervals deemed necessary. The Contractor shall in no way interfere with or delay such activities.

Construction

Conduit. Non-metallic conduit and fittings shall be embedded in the concrete wall or buried in the backfill the length of the wall. Conduit shall be 53C. As the conduit is being placed, the Contractor shall thread instrumentation readout wires through the conduit.

Metallic conduit and fittings shall be installed on the back of the wall approximately 150 mm below the top of the wall. The metallic conduit shall terminate in the instrument cabinet. Conduit shall be 53C. Pull boxes shall be installed where needed to facilitate pulling the readout wires into the conduit.

Pressure cell installation. The Contractor shall install the pressure cells and concrete support pads provided by the State. Locations will be determined in the field by the Engineer. The pressure cells shall be placed in their concrete support pad and the assembly shall be firmly bolted to the concrete formwork. Silicone caulk shall be used to seal the edge of the concrete pad to the form. The readout wire from the pressure cell shall be threaded into the conduit installed as described herein. Prior to stripping the forms, the bolts that attached the concrete pads to the form shall be removed. After removal of the formwork, the pressure cell shall be temporarily covered by a 600-mm by 600-mm by 50-mm thick piece of extruded polystyrene insulation faced with 19-mm thick plywood. The cover shall be removed just prior to placing backfill against the cell. Proper operation of the pressure cells shall be confirmed prior to backfilling.

Vibrating wire strain gage installation. The Contractor shall install the vibrating wire strain gages provided by the State. Locations will be determined in the field by the Engineer. Prior to installation, the reinforcing steel to a distance of 25 mm above and below the attachment point shall be cleaned to bare metal by lightly grinding. The vibrating wire strain gages shall be attached to the vertical bar reinforcing steel by spot welding in accordance with the manufacturer's instructions. The coil housing shall be placed over the strain gage and attached using the spot weldable stainless steel straps provided. The perimeter of the coil housing shall be sealed to the reinforcing steel using silicone caulk. The readout wire from the strain gage shall be threaded into the conduit installed as described herein. Proper operation of the pressure cells shall be confirmed prior to concrete placement.

Tilt meter installation. The Contractor shall install the tilt meters provided by the State. Locations will be determined in the field by the Engineer. Each tilt meter shall be attached to the outside face of the concrete wall with four 3.175 mm (1/8-in.) diameter wedge type concrete anchors. The anchors shall be embedded a minimum of 25 mm into the concrete face. To ensure that the tilt meter remains permanently attached to the wall, each anchor shall be fitted with a flat washer, lock washer and two nuts. The readout wire from the tilt meter shall be threaded into the conduit installed as described herein. Proper operation of the tilt meters shall be confirmed prior to backfilling.

Temperature sensor installation. The Contractor shall install the temperature sensors provided by the State. The approximate locations of the temperature sensors are shown on the plans. The exact locations will be determined in the field by the Engineer. The temperature sensor shall be placed in the fill along with a 300-mm diameter loop of extra readout wire. The readout wire from the temperature sensors shall be threaded into the conduit installed as described herein. The exposed end of the conduit shall be sealed with spray foam insulation.

Instrument cabinet. The Contractor shall install instrument cabinets at Stations 200+55 and 203+21.5 at the toe of the wall in accordance with Standard Plan ES-3E. The cabinet shall be placed prior to placing back fill behind the wall. The termination of the readout wires shall be brought into the cabinet immediately after it is installed.

PAYMENT

Full compensation for furnishing all labor, materials (except State-furnished materials), tools, equipment, and incidentals, and for doing all the work involved in constructing the retaining wall monitoring system, complete in place, including furnishing conduit, instrument cabinet and pull boxes, and hauling State-furnished equipment from and to the site specified, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer, shall be considered as included in the contract price paid per cubic meter for tire shred backfill and no additional compensation will be allowed therefor.

ENGINEER'S ESTIMATE
08-334844

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41	150821	REMOVE HEADWALL	EA	53		
42	150826	REMOVE MANHOLE	EA	17		
43	150829	REMOVE RETAINING WALL	M3	1980		
44	150870	REMOVE CONCRETE DECK SURFACE	M2	85		
45	151224	REMOVE DELINEATOR	EA	100		
46	031948	SALVAGE FENCE (CHAIN LINK)	M	6400		
47	151272	SALVAGE METAL BEAM GUARD RAILING	M	890		
48	151540	RECONSTRUCT CHAIN LINK FENCE	M	170		
49	152301	RESET MARKER	EA	14		
50	152320	RESET ROADSIDE SIGN	EA	170		
51	152390	RELOCATE ROADSIDE SIGN	EA	170		
52	152443	ADJUST PIPE INLET TO GRADE	EA	2		
53	152604	MODIFY INLET	EA	3		
54 (S)	153153	COLD PLANE ASPHALT CONCRETE PAVEMENT (45 MM MAXIMUM)	M2	74 500		
55	153220	REMOVE CONCRETE (CHANNEL)	M3	1120		
56	153221	REMOVE CONCRETE BARRIER	M	6100		
57	153225	PREPARE CONCRETE BRIDGE DECK SURFACE	M2	43		
58	153235	CLEAN BRIDGE DECK	M2	10 760		
59	049540	REMOVE CONCRETE STAIRWAY	LS	LUMP SUM	LUMP SUM	
60	153246	REMOVE CONCRETE (MISCELLANEOUS)	M3	1160		

ENGINEER'S ESTIMATE
08-334844

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	153250	REMOVE SOUND WALL	M2	3910		
62	155003	CAP INLET	EA	45		
63	156585	REMOVE CRASH CUSHION	EA	12		
64	157550	BRIDGE REMOVAL	LS	LUMP SUM	LUMP SUM	
65	157560	BRIDGE REMOVAL (PORTION)	LS	LUMP SUM	LUMP SUM	
66	031949	PUMP STATION REMOVAL	LS	LUMP SUM	LUMP SUM	
67	160101	CLEARING AND GRUBBING	LS	LUMP SUM	LUMP SUM	
68	170101	DEVELOP WATER SUPPLY	LS	LUMP SUM	LUMP SUM	
69	180101	BINDER (DUST PALLIATIVE)	TONN	50		
70	190101	ROADWAY EXCAVATION	M3	702 000		
71	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
72 (F)	192003	STRUCTURE EXCAVATION (BRIDGE)	M3	31 900		
73 (F)	192020	STRUCTURE EXCAVATION (TYPE D)	M3	650		
74 (F)	192026	STRUCTURE EXCAVATION (PUMPING PLANT)	M3	1060		
75 (F)	192027	STRUCTURE BACKFILL (PUMPING PLANT)	M3	560		
76 (F)	192037	STRUCTURE EXCAVATION (RETAINING WALL)	M3	73 785		
77 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	M3	21 800		
78 (F)	193013	STRUCTURE BACKFILL (RETAINING WALL)	M3	62 776		
79 (F)	193031	PERVIOUS BACKFILL MATERIAL (RETAINING WALL)	M3	710		
80	193114	SAND BACKFILL	M3	830		

ENGINEER'S ESTIMATE
08-334844

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
101	209801	MAINTENANCE VEHICLE PULLOUT	EA	32		
102	220101	FINISHING ROADWAY	LS	LUMP SUM	LUMP SUM	
103	250101	CLASS 1 AGGREGATE SUBBASE	M3	90 400		
104	260201	CLASS 2 AGGREGATE BASE	M3	72 800		
105	260210	AGGREGATE BASE (APPROACH SLAB)	M3	87		
106	280000	LEAN CONCRETE BASE	M3	24 600		
107	290201	ASPHALT TREATED PERMEABLE BASE	M3	550		
108	374002	ASPHALTIC EMULSION (FOG SEAL COAT)	TONN	11		
109	031953	ASPHALT CONCRETE (TYPE A, BOND BREAKER)	TONN	1280		
110	390103	ASPHALT CONCRETE (TYPE B)	TONN	400		
111	390153	ASPHALT CONCRETE (TYPE A)	TONN	203 000		
112	390165	ASPHALT CONCRETE (OPEN GRADED)	TONN	25 300		
113	394002	PLACE ASPHALT CONCRETE (MISCELLANEOUS AREA)	M2	23 300		
114	031954	PLACE ASPHALT CONCRETE DIKE (TYPE A, C, E, F)	M	16 800		
115	397001	ASPHALTIC EMULSION (PAINT BINDER)	TONN	700		
116	401000	CONCRETE PAVEMENT	M3	39 900		
117	401066	CONCRETE PAVEMENT (RAMP TERMINI)	M3	2420		
118	401108	REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)	M3	1650		
119	404092	SEAL PAVEMENT JOINT	M	50 000		
120	404094	SEAL LONGITUDINAL ISOLATION JOINT	M	7800		

ENGINEER'S ESTIMATE
08-334844

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
141 (F)	510060	STRUCTURAL CONCRETE, RETAINING WALL	M3	24 927		
142 (F)	510069	STRUCTURE CONCRETE (PUMPING PLANT)	M3	200		
143 (F)	510072	STRUCTURAL CONCRETE, BARRIER SLAB	M3	1120		
144	510086	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	M3	2270		
145	510087	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	M3	860		
146	049544	JACKING SUPERSTRUCTURE	LS	LUMP SUM	LUMP SUM	
147	510102	CLASS A CONCRETE (STRUCTURE)	M3	3810		
148 (F)	510220	CLASS 3 CONCRETE (BACKFILL)	M3	400		
149 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	M3	1490		
150 (F)	049545	MINOR CONCRETE (STAIRWAY)	M3	46		
151	510800	PAVING NOTCH EXTENSION	M3	11		
152 (F)	511051	PLASTER FINISH	M2	83		
153 (F)	511064	FRACTURED RIB TEXTURE	M2	10 540		
154 (F)	049546	SPLITFACE RUNNING BOND TEXTURE	M2	9850		
155 (F)	039547	FRACTURED RIB SPLIT SLATE TEXTURE	M2	14 460		
156 (F)	049548	BEAR RELIEF TEXTURE	M2	465		
157	511106	DRILL AND BOND DOWEL	M	600		
158 (S)	512229	FURNISH PRECAST PRESTRESSED CONCRETE GIRDER (5 M - 10 M)	EA	39		
159 (S)	512230	FURNISH PRECAST PRESTRESSED CONCRETE GIRDER (10 M - 15 M)	EA	51		
160 (S)	512231	FURNISH PRECAST PRESTRESSED CONCRETE GIRDER (15 M - 20 M)	EA	65		

ENGINEER'S ESTIMATE
08-334844

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161 (S)	512232	FURNISH PRECAST PRESTRESSED CONCRETE GIRDER (20 M - 25 M)	EA	72		
162 (S)	512233	FURNISH PRECAST PRESTRESSED CONCRETE GIRDER (25 M - 30 M)	EA	7		
163 (S)	512234	FURNISH PRECAST PRESTRESSED CONCRETE GIRDER (30 M - 35 M)	EA	7		
164 (S)	512500	ERECT PRECAST PRESTRESSED CONCRETE GIRDER	EA	241		
165	515020	REFINISH BRIDGE DECK	M2	21		
166	515041	FURNISH POLYESTER CONCRETE OVERLAY	M3	3		
167 (F)	515042	PLACE POLYESTER CONCRETE OVERLAY	M2	43		
168 (S-F)	517961	SOUND WALL (BARRIER) (MASONRY BLOCK)	M2	12 034		
169 (S-F)	518002	SOUND WALL (MASONRY BLOCK)	M2	420		
170 (S)	518051	PTFE SPHERICAL BEARING	EA	18		
171 (S-F)	518201	MASONRY BLOCK WALL	M2	110		
172 (S)	519117	JOINT SEAL (MR 30 MM)	M	315		
173 (S)	519125	JOINT SEAL ASSEMBLY (MR 70 MM)	M	14		
174 (S)	519126	JOINT SEAL ASSEMBLY (MR 80 MM)	M	53		
175 (S)	519129	JOINT SEAL ASSEMBLY (MR 101 MM - 160 MM)	M	63		
176 (S)	519130	JOINT SEAL ASSEMBLY (MR 161 MM - 240 MM)	M	14		
177 (S)	519131	JOINT SEAL ASSEMBLY (MR 241 MM - 320 MM)	M	110		
178 (S)	519142	JOINT SEAL (MR 40 MM)	M	250		
179 (S)	519144	JOINT SEAL (MR 50 MM)	M	615		
180 (S-F)	520101	BAR REINFORCING STEEL	KG	272 275		

ENGINEER'S ESTIMATE
08-334844

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
201 (F)	597600	PREPARE AND PAINT CONCRETE	M2	9880		
202	620909	450 MM ALTERNATIVE PIPE CULVERT	M	210		
203	620913	600 MM ALTERNATIVE PIPE CULVERT	M	920		
204	620919	750 MM ALTERNATIVE PIPE CULVERT	M	330		
205	650067	300 MM REINFORCED CONCRETE PIPE	M	110		
206	650069	450 MM REINFORCED CONCRETE PIPE	M	5110		
207	650075	600 MM REINFORCED CONCRETE PIPE	M	890		
208	650077	750 MM REINFORCED CONCRETE PIPE	M	710		
209	650079	900 MM REINFORCED CONCRETE PIPE	M	760		
210	650081	1050 MM REINFORCED CONCRETE PIPE	M	260		
211	650084	1200 MM REINFORCED CONCRETE PIPE	M	70		
212	650085	1275 MM REINFORCED CONCRETE PIPE	M	90		
213	650086	1350 MM REINFORCED CONCRETE PIPE	M	90		
214	650092	1800 MM REINFORCED CONCRETE PIPE	M	200		
215	650595	2100 MM REINFORCED CONCRETE PIPE (CLASS V SPECIAL)	M	140		
216	655370	JACKED 1050 MM REINFORCED CONCRETE PIPE (CLASS III)	M	210		
217	655373	JACKED 1500 MM REINFORCED CONCRETE PIPE (CLASS III)	M	140		
218	664010	300 MM CORRUGATED STEEL PIPE (2.01 MM THICK)	M	72		
219	664015	450 MM CORRUGATED STEEL PIPE (2.01 MM THICK)	M	220		
220	664020	600 MM CORRUGATED STEEL PIPE (2.01 MM THICK)	M	130		

ENGINEER'S ESTIMATE
08-334844

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
241	049551	610 MM WELDED STEEL PIPE CASING (BRIDGE)	M	147		
242	705334	300 MM ALTERNATIVE FLARED END SECTION	EA	7		
243	705336	450 MM ALTERNATIVE FLARED END SECTION	EA	2		
244	705338	750 MM ALTERNATIVE FLARED END SECTION	EA	1		
245	706652	900 MM DEBRIS RACK CAGE (H = 1.8 M)	EA	2		
246	707133	900 MM PRECAST CONCRETE PIPE INLET	EA	19		
247	707244	900 MM PRECAST CONCRETE PIPE MANHOLE	EA	26		
248	720119	ROCK SLOPE PROTECTION (1T, METHOD A)	M3	1640		
249	721009	ROCK SLOPE PROTECTION (FACING, METHOD B)	M3	120		
250	721011	ROCK SLOPE PROTECTION (BACKING NO. 2, METHOD B)	M3	23		
251	721023	ROCK SLOPE PROTECTION (1/2T, METHOD B)	M3	67		
252	721024	ROCK SLOPE PROTECTION (1/4T, METHOD B)	M3	4		
253	031957	CLASS 3 CONCRETE (CHANNEL LINING)	M3	630		
254 (F)	721810	SLOPE PAVING (CONCRETE)	M3	430		
255 (F)	049552	SLOPE PAVING (ROCK BLANKET)	M2	830		
256	729010	ROCK SLOPE PROTECTION FABRIC	M2	1300		
257	031958	MINOR CONCRETE (MISC CONSTRUCTION, CURB, CURB AND GUTTER, ISLAND PAVING, DRIVEWAY, SIDEWALK, CURB RAMP)	M3	4880		
258 (F)	731517	MINOR CONCRETE (GUTTER)	M	4714		
259 (S)	740500	DRAINAGE PUMPING EQUIPMENT	LS	LUMP SUM	LUMP SUM	
260 (S)	741001	PUMPING PLANT ELECTRICAL EQUIPMENT	LS	LUMP SUM	LUMP SUM	

ENGINEER'S ESTIMATE
08-334844

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
281 (F)	833142	CONCRETE BARRIER (TYPE 26 MODIFIED)	M	1146		
282 (S)	839310	DOUBLE THRIE BEAM BARRIER	M	150		
283 (S-F)	839521	CABLE RAILING	M	5821		
284 (S)	839537	TERMINAL CONNECTOR	EA	1		
285 (S)	839552	TERMINAL SECTION (TYPE C)	EA	1		
286 (S)	839553	END SECTION	EA	23		
287 (S)	031959	TRANSITION RAILING (TYPE WB)	EA	67		
288 (S)	839559	TERMINAL SYSTEM (TYPE ET)	EA	10		
289 (S)	839565	TERMINAL SYSTEM (TYPE SRT)	EA	66		
290 (S)	839568	TERMINAL ANCHOR ASSEMBLY (TYPE SFT)	EA	66		
291 (S)	839569	TERMINAL ANCHOR ASSEMBLY (TYPE CA)	EA	14		
292 (S)	839570	RETURN SECTION	EA	1		
293 (S)	839601	CRASH CUSHION (TYPE CAT)	EA	9		
294 (S)	839602	CRASH CUSHION (TYPE CAT) BACKUP	EA	10		
295 (S)	839603	CRASH CUSHION (ADIEM)	EA	1		
296	839701	CONCRETE BARRIER (TYPE 60)	M	2860		
297 (F)	839702	CONCRETE BARRIER (TYPE 60A)	M	43		
298	839703	CONCRETE BARRIER (TYPE 60C)	M	1470		
299 (F)	839704	CONCRETE BARRIER (TYPE 60D)	M	6284		
300	839705	CONCRETE BARRIER (TYPE 60E)	M	10		

ENGINEER'S ESTIMATE
08-334844

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
341 (S)	031971	RAMP METERING SYSTEM (LOCATION 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14)	LS	LUMP SUM	LUMP SUM	
342 (S)	031972	MODIFY SIGNAL AND LIGHTING (LOCATION 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12)	LS	LUMP SUM	LUMP SUM	
343 (S)	861504	MODIFY LIGHTING AND SIGN ILLUMINATION	LS	LUMP SUM	LUMP SUM	
344 (S)	031973	MODIFY COMMUNICATION HUB ASSEMBLY	LS	LUMP SUM	LUMP SUM	
345 (S)	031974	MODIFY TRAFFIC MANAGEMENT CENTER	LS	LUMP SUM	LUMP SUM	
346 (S)	869075	SYSTEM TESTING AND DOCUMENTATION	LS	LUMP SUM	LUMP SUM	
347	031982	MOBILIZATION	LS	LUMP SUM	LUMP SUM	
348 (S)	032132	ENVIRONMENTAL RESTORATION	LS	LUMP SUM	LUMP SUM	
349	032167	TIRE SHRED BACKFILL	M3	1319		

TOTAL BID: _____